

THE GENUS STURNELLA.

BY WITMER STONE.

The diversity of coloration in the Meadow Larks included by authors under the name *Sturnella magna mexicana* must have attracted the attention of anyone who has examined a series of these birds.

The range of *mexicana* as given in the American Ornithologists Union Check List, extends northward to the Rio Grande Valley though the larks from this locality are very different looking birds from those which occur in Southern Mexico and Central America.

The Meadow Lark of Southern Florida has also been referred to *mexicana*, but while there is a close resemblance between the two, they are widely separated geographically and their similarity must be considered as a case of parallel development rather than of immediate relationship. The uncertain status of these races seemed to render desirable a careful revision of the genus, the results of which are embodied in the present paper.

For the opportunity of satisfactorily studying the relationships of the Rio Grande Meadow Lark, I am mainly indebted to Mr. Josiah Hoopes, of West Chester, Pa., who has taken great trouble to ascertain the exact status of this bird, and has generously placed his entire series of specimens at my disposal.

I am also indebted to Mr. Robert Ridgway of the United States National Museum, and to Mr. Wm. Brewster, from both of whom I have received series of specimens to aid in my investigations. These together with specimens from the Academy of Natural Sciences of Philadelphia and from my own collection number 192 skins, which constitutes the material upon which my work is based.

The Meadow Lark was first named by Linnæus in 1758,¹ *Alauda magna* based upon Catesby's Carolina, I, p. 33. pl. 33. He gives the "habitat in America, Africa," the latter reference probably referring to *Maeronyx*, which greatly resembles *Sturnella* in coloration. In 1766 in edition XII of the Systema, Linnæus again named the bird *Sturnus ludovicianus*, basing this name on Brisson

¹ Systema Natura, X ed., p. 117.

Aves, II, p. 449, t. 41, f. 1, and in 1816 Vieillot proposed the name *collaris* for it. These names all refer to the eastern bird; *magna* having priority, of course holds for this race.

In 1832 Wagler² proposed the name *hippocrepis* for the Cuban Meadow Lark. In 1843 Audubon described³ *Sturnella neglecta* from the Missouri River above Ft. Croghan. Sclater in 1861⁴ called attention to the difference in Meadow Larks from different parts of America, and proposed the names *mexicana* for the bird of Southern Mexico (Jalapa, Cordova and Orizaba) and *meridionalis* for the one inhabiting Colombia and Venezuela.

Later Ridgway proposed the name *inexpectata* for a very small Meadow Lark from Segovia River, Honduras. These six races have been generally recognized, and have usually been ranked as subspecies, though some authors contend that *neglecta* should be considered as a distinct species.

In addition to the forms already described two others have attracted the attention of ornithologists on account of their peculiarities of coloration, but have hitherto for want of better disposition been included under *mexicana*. These are the Florida and Rio Grande Meadow Larks.

Dr. J. A. Allen was the first to call attention to the peculiarities exhibited by the Florida bird (Bull. Mus. Comp. Zool., II, 1871, p. 288), but as he at that time referred all the forms of *Sturnella* to one species, he naturally did not propose a new term for this race. Chapman⁵ emphasizes the difference between this Meadow Lark and true *magna*, stating that he is unable to unite them, but on the other hand, considers it impossible to separate the Florida bird from *mexicana*, and so records it under that name, a practice which has been followed by others but which seems never to have been ratified by the A. O. U. Committee, as they do not include Florida in the range of *mexicana* in their new Check List.

The Meadow Lark of the Lower Rio Grande Valley also presents strong points of difference from the recognized forms, and has been recorded under a variety of names.

In 1878 Sennett stated that *magna* was common near Brownsville, Texas, but only one specimen was secured (♀ March 26th),

² Isis, 1832, p. 281.

³ Bds. Amer., VII, p. 339, pl. 487.

⁴ Ibis, 1861, p. 179.

⁵ Auk, 1888, p. 273.

and adds that "we did not obtain var. *neglecta*, although it is undoubtedly common."⁶

Dr. J. C. Merrill states that the summer Meadow Lark at Ft. Brown has been identified by Mr. Ridgway as typical *mexicana*. "Its notes and habits do not differ essentially from those of *magna*. Abundant from April until October." A foot note by Mr. Ridgway states that the two specimens examined by him were obtained at Ft. Brown, August 21 and September 13, 1877, and agree exactly with Mexican examples. "They are easily distinguished from true *magna* by smaller general size, including the bill, and much longer legs and feet."

Becham states that all the birds taken or seen by him at Corpus Christi, San Antonio and Beeville (December, 1886, March, 1887) were typical *neglecta*,⁷ while Hancock states that *magna* was common at Corpus Christi, but apparently the only bird shot proved to be *neglecta*; nevertheless he says that the song of the bird was much shorter and more feeble in its utterance than *magna*.⁸ Rhoads⁹ says that he examined a Meadow Lark in the flesh at Corpus Christi (June, 1891) which was undoubtedly *magna*, and that three larks observed during several weeks previous in the same vicinity had the song of *magna*.

In view of these statements the simplest explanation seems to be that while two forms of Meadow Lark are present in winter in the Rio Grande Valley, *neglecta* does not breed there and that the resident bird has a song resembling that of *magna*. Its identity with *mexicana* as claimed by Mr. Ridgway (*l. c.*) I cannot endorse from an examination of the series before me. While these birds doubtless are identical with examples from Northern Mexico just across the Rio Grande River, they are strikingly different from specimens from Southern Mexico, the type locality of *mexicana*.

A careful comparison of a large series of specimens shows that the Meadow Lark of the Rio Grande Valley is as light or lighter than the lightest *neglecta*, averaging very similar to this form in the coloration of the upper surface but agreeing with *magna* in the distribution of the yellow below. The birds from Mexico on the other hand represent the darkest coloration exhibited by *Sturnella*. To

⁶ Bull. U. S. Geogr. and Geol. Survey, 1878, p. 24.

⁷ Proc. U. S. N. M., 1887, p. 670.

⁸ Bull. Ridgway Orn. Club, II, 1887, p. 18.

⁹ Proc. Acad. Nat. Sci. Phila., 1892, p. 108.

unite these two extremes and also the isolated Florida bird under one name seems to me eminently misleading and quite at variance with our treatment of geographical races of other species.

I therefore propose to separate as a distinct subspecies the Rio Grande Meadow Lark and to place the Florida bird for the present at least along with true *magna*, for reasons that will be stated below. The Rio Grande Meadow Lark may be separated as follows:

Sturnella magna hoopesi subsp. nov.

Type No. 786, coll. Josiah Hoopes. Brownsville, Texas, ♂, March 13, 1892, F. B. Armstrong.

Color below as in *magna*, but rather lighter and less buff on the sides and under tail coverts; upper surface much grayer and generally lighter. The brown tints of *magna* are very largely replaced by gray, especially on the wings. Sides of the face whiter than in *magna*; tail bars almost always distinct, i. e., not confluent along the shaft of the feather.

This bird is the lightest of all the Meadow Larks, averaging a little lighter than *neglecta*, the tail bars are also more distinct than in any of the other races.

A series of females in Mr. Hoopes' collection taken in midwinter, are veiled below with very light (almost white) tips to the feathers, and are even more strikingly different from *magna* than those in breeding plumage, since the latter race in winter is veiled with buffy-brown.

While this race approaches *neglecta* in its general light color, the absence of yellow from the malar region will at once distinguish it. From *mexicana* it differs more widely than from any of the other races, as we have in these two the extremes of dark and light coloration.

The several races of Meadow Larks may then be distinguished as follows:

1. Yellow of throat not spread laterally on the malar region.
2. Colors of back darker.
3. Black crescent on breast broader, light streaks above inclining to white, terminal spots on feathers of back generally distinct, *magna*.
3. Black crescent narrower, light streaks above decidedly buff; terminal spots on feathers of the back

generally reduced and crossed by black markings. All brown markings on wings and back bright chestnut brown.

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| 4. Bill very long, | <i>meridionalis.</i> |
| 4. Bill shorter, | <i>mexicana.</i> |
| 4. Bill and all dimensions very small, | <i>inexpectata.</i> |
2. Colors of back lighter, all the browns of the upper surface and wings nearly replaced by gray, *hoopesi.*
1. Yellow of throat spread laterally on the malar region; plumage above more gray than brown, *neglecta.*

THE FLORIDA MEADOW LARK.

Judging from a comparison of Florida birds with a series from the Atlantic States to the northward, I was inclined to separate the former as a distinct race, following Chapman's views as to the impracticability of uniting them with *magna*.

They are smaller and darker than *magna*, with the yellow generally more intense. All the feathers of the upper parts have the black areas greater than in *magna*, especially noticeable on the secondaries and tail. On the latter the crossbars are always confluent, and sometimes the black area covers almost the entire feather.

Mexicana differs from the Florida bird in the much narrower breast crescent, the general buff tint in the light markings and the greater extension of the black area on the feathers of the back. The brown tints in *mexicana* are also much brighter and inclined to chestnut.

Notwithstanding the differences exhibited by the Florida bird, comparison with a series from Avery's Island Louisiana, and another from southern Illinois and Indiana,¹⁰ shows that they approach very close to it in all its peculiarities, the Louisiana birds being quite identical.

In view of this fact, it is certainly impossible to separate the Florida bird, and if any separation is made of these southern dark-colored Meadow Larks, the birds of the Gulf Coast and from some distance up the Mississippi Valley (probably to the upper limit of the Austroriparian Zone), must be included. The adoption of such an arrangement would necessitate the revival of Linnaeus' name

¹⁰ U. S. Nat. Mus. Coll.

ludoviciana for the southern form since the type locality was Louisiana.

So far as I can judge from the material in hand, I think it hardly worth while to attempt such a division.

The exact relationships of some of the races of *Sturnella* is very easily traced, while in the case of others it is less apparent.

The true *Sturnella magna* is found throughout the eastern United States from Maine southward, and westward to the edge of the Plains. In the southern portion of its range it tends to smaller size and darker coloration, as already described.

To the southwest, *magna* extends into northeastern Texas; one from Jefferson Co. (No. 41,444, Coll. Wm. Brewster) being very similar to the eastern bird. In the Rio Grande Valley, however, the larks pass into a very light race, fully as light as the prairie *neglecta*, with the wings even grayer. This is the form here named *hoopesi*.

The exact range of this bird I am unable to trace; all the specimens I have examined were from Brownsville and Laredo.

In southern Mexico and Central America we find the race *mexicana*, a very dark bird, most nearly resembling the larks from Florida. This, in turn, passes into the South American *meridionalis*, which is of about the same coloration, but differs in its proportions, especially in the very large bill. The peculiar form called *inexpectata* is known only from three specimens from Segovia River, Honduras. They are remarkable for their extremely small size, but resemble *mexicana* in coloration.

On the north *mexicana* probably grades into *hoopesi*, but I have no specimens from northern Mexico showing this gradation. One individual from Huachuca, Arizona (March 1, 1887, male, No. 23,198, Coll. Wm. Brewster), however, may, perhaps, be so regarded. It has the narrow breast band of *mexicana*, and is browner above than *hoopesi* from the Rio Grande Valley, which, in other respects, it much resembles, agreeing strictly with this form in the distribution of yellow on the throat.¹¹

Having thus traced the races most clearly connected with *magna* and their offshoots, it remains to speak of the relationships of *neglecta*. This form is found from the eastern border of the plains

¹¹Another bird labelled as shot at the same time and place (No. 23,199, Coll. Wm. Brewster) is a typical male *neglecta*. It has the plumage much worn, as in a breeding bird, while in the one referred to above, the plumage is but little worn, agreeing well with November birds from Arizona. It is strange that two such specimens should be taken on the same date!

westward to the Pacific, northward well into British Columbia and southward to southern California, Arizona and northern Texas, passing into western Mexico and southern Texas in winter.

Eastward it occurs more or less numerously as far as Wisconsin, Illinois and Missouri, thus overlapping the range of *magna* through considerable areas.

As I have no new evidence to offer as to the claims of this bird to specific rank, I have let it stand as a subspecies in accordance with the decision of the A. O. U. Check List Committee, though the excessive rarity of specimens intermediate between *neglecta* and *magna* taken in connection with the overlapping of their breeding ranges, seems to me pretty strong evidence of their specific distinction, even though the differences in coloration are slight.

As already stated, so far as my material goes, it seems that *mexicana* (as here restricted) does not occur within the limits of the United States. If my arrangement is adopted therefore, 501a of the A. O. U. Check List will be changed to *Sturnella magna hoopesi* Rio Grande Meadow Lark.

Measurements in inches of the various races of *Sturnella* are appended.

LENGTH OF WING.

	average	max.	min.
<i>S. magna</i> (Pennsylvania) (9 males)	4.88	5.04	4.75
<i>S. magna</i> (Florida) (10 males)	4.35	4.50	4.20
<i>S. magna mexicana</i> (6 males)	4.40	4.60	4.22
<i>S. magna meridionalis</i> (4 males)	4.33	4.05	4.60
<i>S. magna inexpectata</i> (1 male)	3.85	—	—
<i>S. magna hoopesi</i> (6 males)	4.61	5.	4.45
<i>S. magna neglecta</i> (18 males)	4.95	5.18	4.80

LENGTH OF CULMEN.

	average	max.	min.
<i>S. magna</i> (Pennsylvania) (9 males)	1.34	1.42	1.26
<i>S. magna</i> (Florida) (10 males)	1.29	1.36	1.24
<i>S. magna mexicana</i> (6 males)	1.23	1.30	1.18
<i>S. magna meridionalis</i> (4 males)	1.49	1.52	1.42
<i>S. magna inexpectata</i> (1 male)	1.10	—	—
<i>S. magna hoopesi</i> (6 males)	1.31	1.40	1.25
<i>S. magna neglecta</i> (18 males)	1.28	1.34	1.22